EXPRESS MAIL LABEL NO. EV394064371US

[TS00-068BB]

Amendments to the Specification II.

Please replace the paragraph beginning at the top of Page 6 under "Description of the Preferred Embodiments" and continuing onto Page 7 with the following amended paragraph:

Fig. 2 depicts a vertical cross section of a multiple element bipolar ESD protection device. The starting structure is a p doped substrate 10, typically created on a silicon wafer of 100 crystal orientation and with a doping level in the range of 10¹⁵ atoms per cubic centimeter (a/cm³). A heavily doped n+ first semiconductor layer 12 called a buried layer or subcollector is formed upon the substrate typically using arsenic or antimony as impurity dopants dopents and using either a chemical diffusion or an ion implant process. An ion implant process typically uses an implant energy in the range of 30 KeV with a dosage of 10¹⁵ atoms per square centimeter (a/cm²) to produce a n+ buried layer doping level between 10¹⁸ and 10¹⁹ a/cm³. Next, a light to moderately doped n type epitaxial second semiconductor layer 14 is deposited with a doping level typically in the range of 10¹⁵ to 10¹⁶ a/cm³ with arsenic frequently being used as the dopant dopent source element. A plurality of deep n+ regions 16 are implanted into the second semiconductor layer 14 beneath the collector contact regions 18 typically using either an arsenic, antimony or phosphorous dopant dopent with an implant energy in the range of 30 KeV with a dosage of 10¹⁵ a/cm² to produce an n+ buried layer region doping level between 10¹⁸ and 10¹⁹ a/cm³. This provides a low resistance path to the surface conductor system 34 for the collector current. The structure processing is continued by implanting a third semiconductor layer 24 of p dopant dopent, usually boron, with an implant energy in the range of 30 KeV with a dosage of 10¹⁴ a/cm² to produce a p layer with a typical impurity concentration in a range of between 10¹⁷

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and 10¹⁸ a/cm³ to form the transistor base regions. This is followed by implanting a plurality of

p+ regions 22 using boron as a source with doping levels typically between 10¹⁸ and 10¹⁹ a/cm³

within the third semiconductor layer base region 24 to form high conductivity regions for the

base electrical contacts 20. Next, a plurality of third n doped semiconductor regions 26 is

implanted, typically with phosphorous, with an implant energy in the range of 30 KeV and with a

dosage of between 10¹⁶ and 10¹⁷ a/cm² to produce a p layer with a typical impurity concentration

in a range of between 10¹⁹ and 10²⁰ a/cm³ for the transistor emitter regions 26. The electrical

contacts with the surface collectors for the collector 18, base 20, and emitter 28 are typically

made by using a refractory metal silicide such as titanium silicide (TiSi2) or tungsten silicide

(Wsi₂) (WSi₂) together with doped polysilicon (poly) or aluminum conductor elements.

Please replace the last paragraph beginning on line 11 of Page 10 with the following

amended paragraph:

What is claimed is:

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